

Practice: 603 - Herbaceous Wind Barriers**Scenario: #1 - Annual Species****Scenario Description:**

This scenario describes the implementation of herbaceous barriers to reduce wind velocities and wind-borne particulate matter. In this scenario barriers are composed of annual vegetation, living or dead. Plant materials shall be selected for local adaptation and climatic conditions and are resistant to lodging and are non-spreading in their habit. Barriers will be designed as close to perpendicular to prevailing winds as practical. Barrier direction, spacing, and composition needed to achieve the desired purpose shall be designed using the currently approved wind erosion technology. Resource concerns addressed by this practice are reduce soil erosion by wind, reduce soil particulate emissions into the air, improve plant productivity by protecting crops from wind and wind-borne soil particles, and improve plant available moisture. Scenario size is 8' x 1320' = 0.25 acre.

Before Situation:

Typically cropland has excessive soil disturbance and unsheltered distance that results in excessive wind erosion that affect soil resources. Seedling development and wildlife habitat are negatively affected by wind-borne sediment and sediment-borne contaminants travelling offsite.

After Situation:

Implementation of herbaceous wind barriers will modify the flow and velocity of air dependant upon barrier height, porosity, spacing and wind speed. The annual herbaceous wind barrier will be placed across an entire field perpendicular to applicable prevailing wind direction. Planting width is approximately 8 feet wide. Implementation will reduce soil loss; protect growing plants from damage by wind blown soil particles, provide food and cover for wildlife. Payment is for the design and implementation of annual barriers and required reestablishment.

Scenario Feature Measure: linear feet of barrier planted

Scenario Unit: Linear Feet

Scenario Typical Size: 1,320

Scenario Cost: \$329.62

Scenario Cost/Unit: \$0.25

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$21.70	1	\$21.70
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$39.91	3	\$119.73
Foregone Income						
FI, Corn Irrigated	1960	Irrigated Corn is Primary Crop	Acre	\$489.18	0.25	\$122.30
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.92	3	\$56.76
Materials						
One Species, Cool Season, Annual Grass or Legume	2311	Cool season annual grass or legume. Includes material and shipping only.	Acre	\$36.55	0.25	\$9.14

Practice: 603 - Herbaceous Wind Barriers**Scenario: #2 - Perennial species****Scenario Description:**

This scenario describes the implementation of herbaceous barriers to reduce wind velocities and wind-borne particulate matter. In this scenario barriers are composed of perennial living vegetation. Plant materials shall be selected for local adaptation and climatic conditions and are resistant to lodging and are non-spreading in their habit. Barriers will be designed as close to perpendicular to prevailing winds as practical. Barrier direction, spacing, and composition needed to achieve the desired purpose shall be designed using the currently approved wind erosion technology. Resource concerns addressed by this practice are reduce soil erosion by wind, reduce soil particulate emissions into the air, improve plant productivity by protecting crops from wind and wind-borne soil particles, and improve plant available moisture. Scenario size is planting an area that is 8' wide by 1320 feet long using a grass seed drill to plant the perennial species. Area is 8' x 1320' = 0.25 acres.

Before Situation:

Typically cropland has excessive soil disturbance and unsheltered distance that results in excessive wind erosion that affect soil resources. Seedling development and wildlife habitat are negatively affected by wind-borne sediment and sediment-borne contaminants travelling offsite.

After Situation:

Implementation of herbaceous wind barriers will modify the flow and velocity of air dependant upon barrier height, porosity, spacing and wind speed. The perennial herbaceous wind barrier will be placed across an entire field perpendicular to applicable prevailing wind direction. Planting width is approximately 8 feet wide with rows 7 to 8 " apart and 1320 feet long. Implementation will reduce soil loss; protect growing plants from damage by wind blown soil particles, provide food and cover for wildlife. Payment is for the design and implementation of perennial barriers and required reestablishment.

Scenario Feature Measure: linear feet of barrier planted

Scenario Unit: Linear Feet

Scenario Typical Size: 1,320

Scenario Cost: \$336.98

Scenario Cost/Unit: \$0.26

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$21.70	1	\$21.70
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$39.91	3	\$119.73
Foregone Income						
FI, Corn Irrigated	1960	Irrigated Corn is Primary Crop	Acre	\$489.18	0.25	\$122.30
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.92	3	\$56.76
Materials						
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$65.98	0.25	\$16.50

Practice: 603 - Herbaceous Wind Barriers**Scenario: #3 - Snow Deposition****Scenario Description:**

This scenario describes the implementation of herbaceous barriers that are designed to improve available soil moisture for crops/forages by reducing wind velocities and distributing snow more evenly across an entire field. The planned herbaceous barrier(s) will meet the current 603 standard. Payment for implementation is to defray the costs of design and layout of the barriers, site preparation, planting, application of fertilizers and amendments, and seeding. Current wind erosion technologies will be used in the design of barriers to meet the intended purposes. This scenario is typically used in dryland farming situations. Resource concerns addressed by this practice are reduce soil erosion by wind, reduce soil particulate emissions into the air, improve plant productivity by protecting crops from wind and wind-borne soil particles, and improve plant available moisture. Scenario size is 8' x 1320' = 0.25 acre.

Before Situation:

Typically dryland cropland or hayland are managed so that they are unprotected during fall/winter causing damage by wind erosion and allowing snow to drift or blow across or off the field. Management on cropland commonly includes soil disturbance resulting in wind erosion that degrades soil quality, causes offsite deposition of soil and snow and adversely affects plant productivity and wildlife habitat.

After Situation:

Herbaceous wind barriers will be designed so that wind velocities are reduced enhancing snow deposition onto crop or forage fields that improve plant available soil moisture. The minimum height of these barriers must be at least 1.5 feet during periods of expected snow fall and must achieve a porosity of 60-75 percent while being established in a manner that reduces wind erosion to acceptable levels. Plant materials must be adapted to local soil and climate conditions, including stiff, erect, non-spreading growth habit and resistance to lodging. The use of plant species that enhance plant species diversity will also enhance wildlife habitat. Plant species can include either perennial or annual species. Spacing shall not exceed 12 times the height of the barrier. Mechanical or chemical seedbeds will be prepared to provide a firm weed-free seedbed. Seeding will be completed using an appropriate drill. If annual vegetation is used, re-establishment will be completed so that barriers are in place prior to expected snow fall events.

Scenario Feature Measure: linear feet of barrier planted

Scenario Unit: Linear Feet

Scenario Typical Size: 1,320

Scenario Cost: \$257.49

Scenario Cost/Unit: \$0.20

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$21.70	1	\$21.70
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$39.91	3	\$119.73
Foregone Income						
Fl, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$171.22	0.25	\$42.81
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.92	3	\$56.76
Materials						
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$65.98	0.25	\$16.50